



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/986,431	11/08/2001	Yoshinori Naruoka	Q67192	5225

7590 05/03/2004

SUGHRUE, MION, ZINN,  
MACPEAK & SEAS, PLLC  
2100 Pennsylvania Avenue, N.W.  
Washington, DC 20037

EXAMINER

WEINER, LAURA S

ART UNIT PAPER NUMBER

1745

DATE MAILED: 05/03/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Applicati n No.</b> 09/986,431	<b>Applicant(s)</b> NARUOKA ET AL	
	<b>Examiner</b> Laura S Weiner	<b>Art Unit</b> 1745	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

**A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.**

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
  - If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
  - If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
  - Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 08 November 2001.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-7 is/are pending in the application.  
4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 5 and 6 is/are allowed.
- 6) ☒ Claim(s) 1-4 and 7 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>2-24-03</u> . | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Claim Rejections - 35 USC § 102***

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

### ***Claim Rejections - 35 USC § 103***

2. Claims 1, 3-4, 7 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Nakajima et al. (JP 2000-133262, abstract).

Nakajima et al. teaches a secondary battery comprising a positive active material,  $\text{LiNi}_{0.8}\text{Co}_{0.1}\text{Mn}_{0.1}\text{O}_2$  wherein the ratio R of the total X-ray diffraction peak intensity of the (012) and (006) planes for a CuK $\alpha$  radiation source to the X-ray diffraction peak intensity of the (101) plane is in the range of from 0.51:1 to 0.70:1.

Since Nakajima et al. teaches the same positive electrode material having the ratio of the total X-ray diffraction peak intensity of the (012) and (006) planes for a CuK $\alpha$  radiation source to the X-ray diffraction peak intensity of the (101) plane of 0.510 then inherently the same positive active material for a lithium secondary battery must also be obtained.

In addition, the presently claimed property of the ratio of the total X-ray diffraction peak intensity of the (012) and (006) planes for a CuK $\alpha$  radiation source to the X-ray diffraction peak intensity of the (101) plane of 0.51 would have obviously have

been present once the Nakajima et al. product is provided because 0.51 is within the standard deviation of measuring error. *In re Best*, 195 USPQ 433 (CCPA 1977).

When the claimed range and the prior art range are very similarly (i.e., not greater than 0.50 and 0.51) the range of the prior art establishes *prima facie* obviousness because one of ordinary skill in the art would have expected the similar ranges to have the same properties. See *in re Peterson*, 65 USPQ2d 1379, 1382, citing *titanium Metals Corp. V. Banner*, 227 USPQ 773, 779. Furthermore, the disclosure by the reference of a preferred embodiment does not teach away from the entire disclosure of the patent, all of which must be considered in the analysis of obviousness. See *In re Burckel*, 201 USPQ 67, 70.

3. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Nakajima et al. (JP 2000-133262, abstract) in view of Inoue et al. (5,707,756).

Nakajima et al. teaches a secondary battery comprising a positive active material,  $\text{LiNi}_{0.5}\text{Co}_{0.5}\text{Mn}_{0.5}\text{O}_2$  wherein the ratio R of the total X-ray diffraction peak intensity of the (012) and (006) planes for a CuK $\alpha$  radiation source to the X-ray diffraction peak intensity of the (101) plane is in the range of from 0.510:1 to 0.700:1.

Nakajima et al. teaches the claimed invention except does not specify that the positive active material has a mean particle diameter of 4-25  $\mu\text{m}$  and a BET specific surface area from 0.2 to 1.5  $\text{m}^2/\text{g}$ .

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have a positive active material having a mean particle diameter

Art Unit: 1745

of 4-25  $\mu\text{m}$  and a BET specific surface area from 0.2 to 1.5  $\text{m}^2/\text{g}$ , since it has been held that where general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have a positive active material having a mean particle diameter of 4-25  $\mu\text{m}$  and a BET specific surface area from 0.2 to 1.5  $\text{m}^2/\text{g}$ , since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

Inoue et al. teaches in column 30 that it is known to use lithium containing metal oxides in the nonaqueous secondary battery and in column 17, lines 31-40, that the average grain size of the positive electrode active material is not particularly limited but is preferably 0.1 to 50  $\mu\text{m}$  and that the specific surface area is not particularly limited but it is preferably in the range of 0.01-50  $\text{m}^2/\text{g}$  measured by the BET method.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have a positive active material having a mean particle diameter of 4-25  $\mu\text{m}$  and a BET specific surface area from 0.2 to 1.5  $\text{m}^2/\text{g}$  because Inoue et al. teaches that the average grain size and specific surface area is not particularly limited and teaches the claimed ranges.

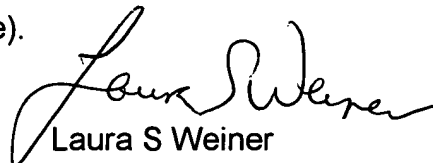
***Allowable Subject Matter***

4. Claims 5-6 are allowed.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Laura S Weiner whose telephone number is 571-272-1294. The examiner can normally be reached on M-F (6:30-4:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick Ryan can be reached on 571-272-1292. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
Laura S Weiner  
Primary Examiner  
Art Unit 1745

April 29, 2004